

WHAT IS CLAIMED IS:

1. A microelectronic assembly comprising:
a substrate having bonding pads disposed on a mounting surface thereof,
the bonding pads including a ferromagnetic material therein ;
solidified solder disposed on the bonding pads;
a surface mount component bonded to the substrate by way of the
solidified solder and including a magnetic layer disposed on a substrate side
thereof, the magnetic layer being adapted to cooperate with the ferromagnetic
material in the bonding pads to establish a magnetic force of a sufficient
magnitude to hold the surface mount component on the substrate before and
during soldering.
2. The assembly of claim 1, wherein the surface mount component is a
capacitor.
3. The assembly of claim 1, wherein the bonding pads on the substrate
comprise ENIG pads, and wherein the ferromagnetic material in the bonding pads
comprises nickel.
4. The assembly of claim 1, wherein soldering comprises a reflow process,
and wherein the magnetic layer comprises a magnetic material having a Curie
temperature that is above a peak reflow temperature range of the solder.
5. The assembly of claim 1, wherein the magnetic layer comprises a magnetic
material having a remanence adapted to have a minimum impact on a
performance of circuits within the SMT component or within the substrate.
6. The assembly of claim 1, wherein the magnetic layer comprises a magnetic
material including at least one of nickel and a ferronickel alloy.
7. The assembly of claim 1, wherein the magnetic layer has a thickness
between about 1 micron and about 5 microns.

8. The assembly of claim 1, wherein the magnetic layer is one of a continuous layer and a discontinuous layer.
9. The assembly of claim 8, wherein the magnetic layer comprises sublayers defining a pattern adapted to minimize impact on circuits of the surface mount component from a magnetic field of the magnetic layer.
10. The assembly of claim 8, wherein the magnetic layer comprises sublayers defining a pattern corresponding to a pattern of the bonding pads on the substrate.
11. A method of forming a surface mount component comprising:
providing a surface mount component and having a substrate side adapted to be bonded to bonding pads of a substrate via solidified solder;
providing a magnetic layer adapted to cooperate with a ferromagnetic material in the bonding pads of the substrate to establish a magnetic force of a sufficient magnitude to hold the surface mount component on the substrate before and during soldering.
12. The method of claim 11, wherein providing a magnetic layer comprises printing a magnetic material onto the substrate side of the surface mount component.
13. The method of claim 1, wherein the surface mount component is a capacitor.
14. The method of claim 1, wherein soldering comprises a reflow process, and wherein the magnetic layer comprises a magnetic material having a Curie temperature that is above a peak reflow temperature range of the solder.

15. The method of claim 1, wherein the magnetic layer comprises a magnetic material having a remanence adapted to have a minimum impact on a performance of circuits within the SMT component or within the substrate.
16. The method of claim 1, wherein the magnetic layer comprises a magnetic material including at least one of nickel and a ferronickel alloy.
17. The method of claim 1, wherein the magnetic layer has a thickness between about 1 micron and about 5 microns.
18. The method of claim 1, wherein the magnetic layer is one of a continuous layer and a discontinuous layer.
19. A surface mount component adapted to be bonded to bonding pads of a substrate by way of solidified solder, the surface mount component including a magnetic layer disposed on a substrate side thereof, the magnetic layer being adapted to cooperate with a ferromagnetic material in the bonding pads to establish a magnetic force of a sufficient magnitude to hold the surface mount component on the substrate before and during soldering.
20. The surface mount component of claim 19, wherein the surface mount component is a capacitor.
21. The surface mount component of claim 19, wherein soldering comprises a reflow process, and wherein the magnetic layer comprises a magnetic material having a Curie temperature that is above a peak reflow temperature range of the solder.
22. The surface mount component of claim 19, wherein the magnetic layer comprises a magnetic material having a remanence adapted to have a minimum impact on a performance of circuits within the SMT component or within the substrate.

23. The surface mount component of claim 19, wherein the magnetic layer comprises a magnetic material including at least one of nickel and a ferronickel alloy.
24. The surface mount component of claim 19, wherein the magnetic layer has a thickness between about 1 micron and about 5 microns.
25. The surface mount component of claim 19, wherein the magnetic layer is one of a continuous layer and a discontinuous layer.
26. The surface mount component of claim 25, wherein the magnetic layer comprises sublayers defining a pattern adapted to minimize impact on circuits of the surface mount component from a magnetic field of the magnetic layer.
27. The surface mount component of claim 25, wherein the magnetic layer comprises sublayers defining a pattern corresponding to a pattern of the bonding pads on the substrate.
28. A system comprising:
a microelectronic assembly including:
a substrate having bonding pads disposed on a mounting surface thereof, the bonding pads including a ferromagnetic material therein ;
solidified solder disposed on the bonding pads;
a surface mount component bonded to the substrate by way of the solidified solder and including a magnetic layer disposed on a substrate side thereof, the magnetic layer being adapted to cooperate with the ferromagnetic material in the bonding pads to establish a magnetic force of a sufficient magnitude to hold the surface mount component on the substrate before and during soldering; and
a main memory coupled to the microelectronic assembly.
29. The system of claim 28, wherein the surface mount component is a capacitor.

30. The system of claim 28, wherein the bonding pads on the substrate comprise ENIG pads, and wherein the ferromagnetic material in the bonding pads comprises nickel.